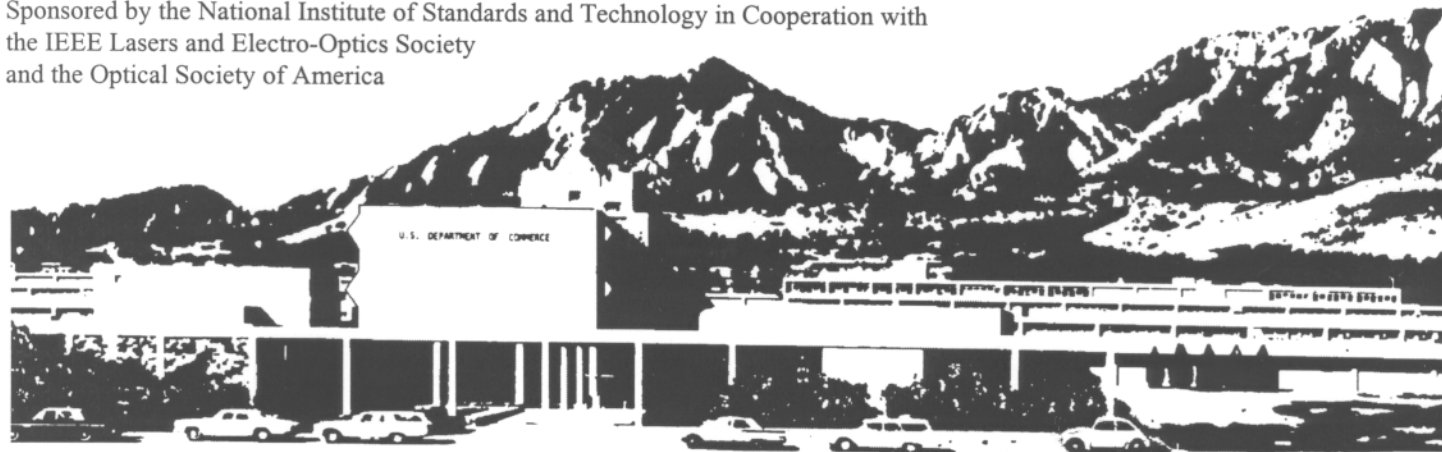


Symposium on Optical Fiber Measurements

PROGRAM

Boulder, CO September 26-28, 2000

Sponsored by the National Institute of Standards and Technology in Cooperation with
the IEEE Lasers and Electro-Optics Society
and the Optical Society of America



Tuesday, September 26, 2000

- 9:00 **Opening remarks:**
G.W. Day, NIST, Symposium General Chair
P.A. Williams, NIST, Symposium Program Chair

Session I. Engineered Fibers, Chair: Paul Williams, NIST

- 9:15 **INVITED:** Characterisation of Photonic Crystal Fibres, T.A. Birks, J.C. Knight, B.J. Mangan, A. Ortigosa-Blanch and P. St.J. Russell, University of Bath
9:45 Characterization of the Guiding Properties of a Bragg Type Photonic-Band-Gap Fiber, P. Roy, F. Brechet, P. Leproux, J. Marcou, and D. Pagnoux, Institut de Recherche en Communications Optiques et Microondes
10:00 Ultra-Broad Supercontinuum Generation in Tapered Telecommunications Fibres, T.A. Birks, W.J. Wadsworth, P. St.J. Russell, University of Bath
10:15 A Simple Servo Controlled Scanning Reflectance Measurement Method for Determining the Refractive Index Profile of a Waveguide, Y. Park, N.H. Seong, Y.C. Youk, U.C. Peak, and D.Y. Kim, Kwangju Institute of Science and Technology
10:30 **BREAK**

Session II. Network Metrology, Chair: Michael Hackert, Corning, Inc.

- 11:00 **INVITED:** Characterizing the Filter Response of Optical Routers, Chellappan Narayanan, Gail Bogert, Lucent Technologies
11:30 Saturated Optogalvanic Transition in Krypton at 1564 nm, David A. Humphreys, National Physical Laboratory
11:45 **INVITED:** Characterization of Multimode Fiber for 10 Gbps Operation, John S. Abbott, Corning, Inc.
12:15 Short Pulse, Small Spot Size, Central Launch in Multimode Fibres: Comparison Between Measurement and Computation, M.J.N. van Stralen, Plasma Optical Fibre B.V.; B.P. de Hon, M. Bingle, Eindhoven University of Technology; F.J. Achten, Plasma Optical Fibre B.V.
12:30 **LUNCH**

Session III. Nonlinear Measurements, Chair: William Reed, Lucent Technologies

- 2:00 **INVITED:** Measurement of the Non-Linear Index of Refraction, N_2 , Dan L. Philen, Lucent Technologies, Bell Laboratories
2:30 Measurement Conditions of Nonlinear Refractive Index n_2 for Various Single-Mode Fibers by CW Dual-Frequency Method, Kazuhide Nakajima, Takuya Omae, and Masaharu Ohashi, NTT Access Network Service Systems Laboratories
2:45 KDD Nonlinear Coefficient Round Robin Measurements for Various Dispersion Shifted Fibers in Japan and UK, Yoshinori Namihira, KDD R&D Laboratories, Inc.
3:00 Kerr Coefficient for Chaotic Light in Optical Fiber, S.M. Pietralunga, P. Martelli, M. Ferrario, CoreCom; and M. Martinelli, Politecnico di Milano
3:15 Estimation of the Polarization Coupling Length in Standard Telecom Fibers from Measurements of Nonlinear Polarization Rotation, C. Vinegoni, M. Wegmüller, N. Gisin, University of Geneva
3:30 **BREAK**

Session IV. MFD and Effective Area, Chair: Casey Shaar, GN Nettest

- 4:00 A Comparison of Three Techniques for Effective Area Measurement of Single-Mode Optical Fibres, David A. Humphreys, Robert S. Billington, Andrew Parker, Brian Walker, Dominic S. Wells, National Physical Laboratory, Andrew G. Hallam, GN Nettest, Isabelle Bongrand, Université de Nice
4:15 Model for Calculation of Mode Field Diameter Along the Fibre Using Bi-Directional OTDR Measurements, J. Mezger, G. v. Broekhoven, P. Pleunis, R.v. Laere, Plasma Optical Fibre B.V.
4:30 A Novel Far-Field Scanning Technique for Rapid Measurement of Optical Fiber Parameters, Jeffrey L. Guttman, Razvan Chirita, and Carmen D. Palsan, Photon, Inc.
4:45 The Status of International Fiber Measurement Standards, W.B. Gardner, Rapporteur for Q. 15/15 ITU-T; A.H. Cherin, Convener - Working Group 1, IEC SC86A
5:00 **SESSION CLOSE**
7:00 **RECEPTION, REGAL HARVEST HOUSE**

Wednesday, September 27, 2000

Session V. PMD, Chair: Arthur Barlow, PerkinElmer Optoelectronics

- 9:00 **INVITED:** Measurement Issues in PMD Compensators, Dipak Chowhury, Corning, Inc.
9:30 A Poincare Sphere Method for Measuring Polarization-Mode Dispersion Using Four-Wave Mixing (FWM) in Single-Mode Optical Fiber, Shuxian Song, Ciena Corporation, Kenneth Demarest, Christopher Allen, University of Kansas
9:45 Modulation Phase Shift Measurement of PMD: Towards an Engineered Solution, A.J. Barlow, J. Henstock, C. Mackechnie, PerkinElmer Optoelectronics
10:00 Interpretation of PMD Measurements in Components: A Case Study, Normand Cyr, EXFO, Inc. Electro-Optical Engineering, Inc.
10:15 An Intercomparison of Polarisation Mode Dispersion Measurements and Calibration Artefacts, D.J. Ives, National Physical Laboratory
10:30 **BREAK**

Session VI. PMD and Polarization, Chair: Tom Hanson, Corning, Inc.

- 11:00 **INVITED:** High Speed Soliton Transmission on Fiber Links with High PMD, Peter A. Andrekson, Chalmers University of Technology
- 11:30 Characterization of High-Order PMD, A. Eyal, Y. Li, and A. Yariv, California Institute of Technology
- 11:45 Measurements of Enhanced BER Fluctuations Due to Combined PMD and PDL Effects in Optical Systems, N. Gisin and M. Wegmüller, University of Geneva; A. Bessa dos Santos, J.P. von der Weid, Pontificia Universidade Católica
- 12:00 Reflectometric Characterization of Distributed Birefringence in Installed Single-Mode Fibers, Massimo Artiglia, Marco Schiano, Tiziana Tambosso, CSELT; Andrea Galtarossa, Luca Palmieri, Anna Pizzinat, Università di Padova
- 12:15 Accurate Spectral Characterization of Polarization Dependant Loss, R.M. Craig, NIST
- 12:30 **LUNCH**

Session VII. Components, Chair: Ka Kha Wong, Codeon Corporation

- 2:00 Heterodyne System at 850 nm for Measuring Photoreceiver Frequency Response, Paul D. Hale and C.M. Wang, NIST
- 2:15 Time-Domain Measurement of the Frequency Response of High-Speed Photoreceivers to 50 GHz, Tracy S. Clement, Paul D. Hale, Kevin C. Coakley, and C.M. Wang, NIST
- 2:30 **INVITED:** Optical Amplifier Measurement Issues: Doped Fiber, Semiconductor and Raman, Jack Dupre, Agilent Technologies
- 3:00 Comparison of Erbium Amplifier Characterization Using an ITU Grid with Varying Channel Separations, M.E. Bray, R.T. Elliot, and K.P. Jones, Nortel Networks
- 3:15 Gamma and Proton Radiation Effects in Erbium-Doped Fiber Amplifiers: Active and Passive Measurements, Todd S. Rose, Deana Gunn, and George C. Valley, The Aerospace Corporation
- 3:30 **BREAK**

Session VIII. Raman amplification, Chair: Greg Schinn, EXFO, Inc.

- 4:00 Issues in Raman Gain Measurements, R.H. Stolen, Virginia Tech.
- 4:15 Broadband Raman Gain Characterization in Various Optical Fibers, F. Koch, S.A.E. Lewis, S.V. Chernikov, J.R. Taylor, Imperial College
- 4:30 Raman Spectra of Line Fibres Measured Over 30 THz, D. Hamoir, N. Torabi, A. Bergonzo, S. Borne and D. Bayart, Alcatel
- 4:45 Raman Gain Measurements in Optical Fibers, Stuart Gray, Corning, Inc.
- 5:00 **SESSION CLOSE**

Thursday, September 28, 2000

Session IX. Bragg grating dispersion, Chair: Janet Jackel, Telcordia Technologies

- 9:00 **INVITED:** Overview of Coherent Reflectometry Techniques: Characterization of Components and Small Systems, M. Wegmüller, P. Oberson, J.P. von der Weid, O. Guinnard, L. Guinnard, C., Vinegoni, M. Legré, N. Gisin, University of Geneva
- 9:30 Fiber Bragg Grating Metrology Round Robin: Telecom Group, A.H. Rose, C.M. Wang, and S.D. Dyer, NIST
- 9:45 Measurements of Dense Group Delay Ripple Using the Phase Shift Method: Effect of Modulation Frequency, T. Niemi, M. Uusimaa, and H. Ludvigsen, Helsinki University of Technology
- 10:00 A Fast and Accurate Measurement of Both Transmission and Reflection Group Delay in Fiber Bragg Gratings, Shellee D. Dyer and Kent B. Rochford, NIST
- 10:15 Differential Group Delay Measurements of Chirped Fiber Bragg Gratings Using Photon Counting, Hugues de Riedmatten, Mark Wegmüller, Hugo Zbinden, Nicolas Gisin, University of Geneva
- 10:30 **BREAK**

X. Chromatic dispersion, Chair: Gordon Day, NIST

- 11:00 **INVITED:** Measurement Issues for Dispersion Compensation, R.M. Jopson, Lucent Technologies
- 11:30 Chromatic Dispersion Measurement Using Phase-Shift Technique for Installed Long Haul Optical Submarine Cable, Toshio Kawazawa, Takuyuki Yamaguchi, Koji Goto, KDD
- 11:45 A Novel Method for Measuring Chromatic Dispersion of Long Optical Fibers by Means of High Resolution Optical Ranging System Using a Frequency-Shifted Feedback Laser, Koichi Iiyama, Takahiro Maeda, and Saburo Takamiya, Kanazawa University
- 12:00 **SYMPOSIUM CLOSE**

2:00-3:30 Informal Forum: Dispersion/PMD Metrology for Telecommunication Components

ADDITIONAL INFORMATION: The Symposium will be held in the auditorium of the Department of Commerce Laboratories, 325 Broadway, Boulder, Colorado. Attendees are encouraged to register in advance and make early accommodation arrangements. For details, see the Accommodation, Transportation, and Registration brochure, which can be obtained from W. Ortega-Henderson, NIST, (303) 497-3693, FAX (303) 497-5222, ortegaw@boulder.nist.gov, or on the web at <http://www.boulder.nist.gov/blconf.htm>.

SYMPOSIUM COMMITTEE

G.W. Day, NIST, General Chair
P.A. Williams, NIST, Program Chair
M. Artiglia, CSELT
A.J. Barlow, PerkinElmer Optoelectronics
J. Benson, NPL
S.C. Fleming, University of Sydney

D.L. Franzen, NIST
N. Gisin, University of Geneva
M. Hackert, Corning, Inc.
T.A. Hanson, Corning, Inc.
J. Jackel, Telcordia Technologies

H. Nagai, Anritsu
W.A. Reed, Lucent Technologies
G.W. Schinn, EXFO, Inc.
C. Shaar, GN Nettest
K.K. Wong, Codeon Corporation